

**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 09/965,423  
Filing Date: September 27, 2001  
Applicants: Ali Rihan and Emerson Keith Colyer  
Group Art Unit: 1713  
Examiner: Tatyana Zalukaeva  
Title: Fast Drying Clearcoat Refinish Composition  
Docket Nos.: IN-5501 (BASF)  
0906-000311 (Harness, Dickey & Pierce)

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**Declaration of Ali Rihan Under 37 C.F.R. § 1.132**

I, Ali Rihan, do say and declare:

1. I have a B.S. degree in Civil Engineering. I have been employed as a research and development chemist in the automotive refinish coatings field for 3 years. I am an inventor of this application.
2. I prepared refinish clearcoat compositions comparing the acrylic of Example 1 of the application in Example 5 with the acrylic of Comparative Example B based on Example E3 of Rink et al., U.S. Patent Number 5,759,631, modified to have a number average molecular weight at the top of the Rink et al. preferred range in Comparative Example C. The examples were prepared by combining 3 parts by volume of the mixture of materials listed, 1 part by volume of DH-46 Hardener, and 1 part by volume of UR 50 reducer.

|  | Example 5   | Comparative<br>Example C |
|--|-------------|--------------------------|
| 3 PARTS BY VOLUME OF THE MIXTURE OF:   |             |                          |
| Hydroxyl-functional acrylic from Example 2<br>(AN about 10, OH eq. wt. about 450, Mn about<br>1000, about 79%NV) | 65.7 grams  | 65.7 grams               |
| EEP (ethyl ethoxypropionate)   | 13.2 grams  | 13.2 grams               |
| EBA (ethylene glycol butyl ether acetate)  | 3.0 grams   | 3.0 grams                |
| Additive package<br>(containing UV absorbers, tin catalyst, and other<br>customary additives)                    | 2.748 grams | 2.748 grams              |
| Acrylic resin of Example 1   | 15.3 grams  | 0.0 grams                |
| Acrylic resin of Comparative Example B   | 0.0 grams   | 15.3 grams               |
| was combined with:   |             |                          |
| 1 PART BY VOLUME OF: DH-46 Hardener  |             |                          |
| and  |             |                          |
| 1 PART BY VOLUME OF: UR 50 reducer.  |             |                          |

Testing of Example 5 according to the invention and Comparative Example C according to  
Rink et al.

The Example 5 and Comparative Example C refinish clearcoat compositions were sprayed with a SATA 95 HVLP spray gun using a 1.3mm tip and 43 psi on 4-inch-by-12-inch steel panels. Two coats were applied with a 10 minutes flash between coats to form the clearcoat layer. Both coating layers were allowed to air dry at ambient temperature of 72 F.

**RESULTS:**

The refinish clearcoat of Example 5 had an average dust free time of 67.5 minutes at an average film build of 2.4 mils.

The refinish clearcoat of Comparative Example C had an average dust free time of 82.5 minutes at an average film build of 2.3 mils. (The slightly thinner film build should dry faster than if the coating had a 2.4 mil-film build as did Example 5. The longer dust free time for Comparative Example C is, therefore, is even more significant considering its lower film build.)

The refinish clearcoat of Example 5 had an average tack free time of 270 minutes at an average film build of 2.4 mils.

The refinish clearcoat of Comparative Example C had an average tack free time of 360 minutes at an average film build of 2.3 mils. (Again, at a thinner film build, the tack free time should be shorter. Nevertheless, the tack free time for Comparative Example C is 33% longer than the tack free time obtained from Example 5.)

3. The refinish clearcoat of Example 5 had a faster surface dry in both tests than the refinish clearcoat of Comparative Example C. The acrylic of our invention allows the surface to dry faster than the acrylic prepared according to the Rink, et al. patent. A faster surface dry is critical in the body-shop refinish business because this allows the customer to move the vehicle being sprayed out of the booth sooner without fear of marring and/or severe dust contamination and to begin processing the next vehicle. The resulting time saved allows for increased productivity.

4. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand that willful false statements and the like if made herein would be punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and may jeopardize the validity of the application or any patent issuing therefrom.



Ali Rihan

December 4, 2002